



## Overview

Product name	iQ-Chart Box V2
Principle	A compact illumination device for reflective test charts, based on iQ-LED technology (includes micro spectrometer), software controlled. The iQ-LED technology is a spectrally tunable light source optimized for best spectral matches. It allows CRI values up to 99, depending on illuminant and intensity.

## Features

### Box

Front opening	Rectangular front opening, 820 mm x 530 mm
Specialties	<ul style="list-style-type: none"> <li>• Chart mount for A444, A460 or A540 sized test charts</li> <li>• Chart mount on rails to move it to the front opening for easy exchange of the chart</li> <li>• Included ND filters can be folded over the iQ-LED illumination to create low-light conditions</li> </ul>

### Illumination

Light source	8 x Q-LED V2 Image Engineering iQ-LED V2 technology: 41 SMD high power LEDs / separated in 20 color channels / Spectral range: 380 – 820 nm / Intensity controlled via 4000 steps per channel and 32 kHz PWM (switchable to 1000 steps with 128 kHz) / Approx. lifetime of 10000 hours / Typical LED spectra on request
Control functionality without PC	Storage of up to 44 different illuminants and one sequence on the device, default light source, controllable via micro switches on the device without PC
Uniformity	> 95% (A280 picture size centered in chart plane) > 90% (A460 picture size)
Illumination stability	+/- 1% when stabilized (2% after switching D illuminants in the first five seconds)
Response time (switch illuminant)	< 50 ms
Maximum / Minimum illumination level	2000 lx for standard D illuminants min. down to 25 lx (depending on illuminant and required curve fit / CRI) with ND filters down to 1.5 lux (measured at the center of an A460-sized test chart and the ND filter covers the spectral range up to 680 nm)



Dim function	iQ-LED: Software-based by presetting the intensity or selecting different pre-stored intensity illuminants directly on the device, further dimming via included ND filters.
Predefined standard illuminants	D50, D55, D65, D75, A, B, C, E <ul style="list-style-type: none"> <li>Planckian spectral curve by selected temperature (1900 - 18000 K)</li> </ul>
Service life	10000 h (iQ-LED)

## Spectrometer

Construction	Removable calibration device with a spectrometer to place at the measurement position (chart plane) inside of the box
Spectral range	305 – 1100 nm
Pixel resolution	2048 pixel
FWHM	2.5 nm
Output data	Real-time measurement of spectral trend and radiant power via control software
Calibration	Yearly calibration required independent of working hours (contact Image Engineering), NIST traceable

## Software

System requirements	PC with Windows 7 operating system (or higher) USB port
Functions	<ul style="list-style-type: none"> <li>Auto generation of standard illuminants or externally measured spectra</li> <li>Creation or adaptation of spectral trends via 20 LED channels</li> <li>Save and load function of self-defined spectral arrangements or intensities</li> <li>Storage of illuminants/sequences on the device</li> <li>Creation of test sequences</li> <li>Real-time display of spectral measurement</li> <li>Real-time calculation of CCT, CRI, curve fit, and illumination level (lux/watt)</li> </ul>
API (C++)	Available as a separate option (iQ-LED API)

## General description hardware

Power supply/consumption	110 V / 230 V, 800 W
Ports	1 x USB for software control 1 x port for the power adaptor 1 x 3.5 mm jack for trigger output
Dimension [W x H x D]	1270 x 870 x 767 mm
Weight	40 kg
Operating conditions	Optimal: 22 - 26 °C, maximum: 18 - 28 °C
Warm-up time	< 2 min at optimal ambient temperature
Scope of delivery	iQ-Chart Box, calibration device with the spectrometer, power cord USB cable, control software, calibration protocol
Accessories	Rolling Cart